

RESIDENTIAL PLAN REVIEW CHECKLIST
FREDERICK COUNTY DEPARTMENT OF PERMITS AND INSPECTIONS
30 NORTH MARKET ST., FREDERICK, MARYLAND 21701 (301-600-3353)

Application No: _____

Date: _____

To: _____ (Applicant)

Plan Reviewer: _____

The plans submitted for the above referenced project have been reviewed for compliance with the Frederick County Building Code. The following marked (✓) items are noted as non-complying or are not found within the plans and are pointed out for your information.

NOTE: STUDY THIS CAREFULLY. FAILURE TO COMPLY WITH THE BUILDING CODE WILL RESULT IN A NOTICE OF VIOLATION. THE FOLLOWING EXCERPTS DO NOT ENCOMPASS THE ENTIRE BUILDING CODE OF FREDERICK COUNTY, BUT ARE PROVIDED ONLY AS A SYNOPSIS OF CODE REQUIRMENTS FOR RESIDENTIAL CONSTRUCTION. APPROVED PLANS MUST BE MAINTAINED AT JOB SITE.

**Code
Section
Design
Criteria**

**Comment
Number**

Synopsis from International Residential Code 2009

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

| GRND SNOW LOAD | WIND DESIGN | | Seismic Design Category | Subject to Damage From | | | Winter Design Temp | Ice Barrier Underlayment Required | Flood Hazards | Air Freezing Index | Mean Annual Temp | Radon Protection Required |
|----------------------|----------------|------------------------|-------------------------------|------------------------|------------------------|------------|--------------------------|---|------------------------------------|--------------------------|------------------------|---------------------------------|
| | Speed (mph) | Topographic effects | | Weathering | Frost line depth | Termite | | | | | | |
| 30 psf | 90 | NO | B | SEVERE | 30" | YES | 12° F | YES | PLANNING AND ZONING | <1,500 | 52° F | YES |

- Footing**
R403
- 2a. _____ Footing shall bear on undisturbed soil and below frost line (min. 30" from finish grade to bottom).
 b. _____ Min. continuous footing size is: Depth: 6" Width: foundation wall thickness + 2" each side.
 c. _____ Min. masonry chimney footing size is: Depth: 12" Width & Length: W & L Masonry + 6" all sides.
 d. _____ Min. column or pier footing size (for normal residential loading and average assumed 2,000 PSF soil bearing capacity unless otherwise determined by calculation is 24"x24"x12" thick for one story; and 30"x30"x15" for two story).
- Foundation**
R404.1.6,
R401.3, &
Plbg. Code
1106
R905.2.7.1
R903.4
R903.4.1
- 3a. _____ Foundation walls shall extend at least 6" above finished grade at all points; 4" for masonry veneer.
 b. _____ Lots shall be graded so as to drain surface water away from foundation walls. The grade away from foundation walls shall fall a minimum of 6" within the first 10'. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection so as not to create a hazard. (Alternate means allowed per exception.)
 c. _____ Ice guard membrane 2' minimum along all eaves and valleys. Recommended on entire roof with less than 4/12 pitch.
 d. _____ Gutters and downspouts are required unless an alternative system with a certified research report is submitted to, and approved by, the local Administrative Authority.
- Foundation**
R405,
405.1 &
Plbg. Code
1111.1
- 4a. _____ Drains shall be provided around all concrete, masonry, and precast foundations that retain earth and enclose habitable or usable spaces located below grade, including cellars and crawl spaces where interior grade is lower than exterior.
 b. _____ Minimum 4" diameter drain pipe.
 c. _____ Minimum 2" gravel under drain tile and 6" gravel cover.
 d. _____ Topped with a filter membrane material.
 e. _____ Discharge to gravity outfall. Where not possible to convey drainage by gravity outfall, discharge to sump pit with pump.
- Dampproofing**
R406
- 5a. _____ On poured concrete and precast exterior foundation walls enclosing habitable or usable space provide an approved coating per R406.1 from footing to finish grade.
 b. _____ On exterior foundation walls of masonry units enclosing habitable or usable storage space; provide 3/8" portland cement parging (coved at footing) to finish grade plus dampproofing per above.
 c. _____ For alternate systems provide documentation and/or literature for the proposed waterproofing/ dampproofing method.
- Backfill
Placement**
R404.1.7
6. _____ Backfill shall not be placed against the wall until the foundation has sufficient strength and has been anchored to the floor framing above or has been adequately braced to prevent damage by the backfill. Fill all areas simultaneously to provide for an even distribution of ground pressure.
- Radon**
Appendix "F"
7. _____ Radon mitigation per Appendix "F". Vent pipe must extend vertically straight through the roof from the sub-slab, with 45 degree elbows allowed to bend around obstacles.

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| Concrete Floor Slabs R506 | 8a. _____ | Interior concrete floor slabs: (min. 3 1/2" thick) |
| | b. _____ | Prepared sub grade to be compacted with no vegetation, topsoil, or foreign materials. |
| | c. _____ | Min. 4" thick gravel base course plus requirements below. |
| | | Recommendation: Control joints: no expanse to exceed 30 lin. ft, recommend 6"x6" 10 gauge welded wire mesh at mid-depth of slab or fiber-mesh concrete. |
| | d. _____ | Vapor barrier: 6 mil polyethylene or approved vapor retarder with lapped joints not less than 6". |
| | e. _____ | Max. fill beneath a concrete floor slab must not exceed 8" of earth or 24" gravel; if exceeded the following apply: |
| | f. _____ | Mechanically compacted fill must be verified by a Geotechnical Engineer or the slab shall be designed to be self-supporting and certified by a registered Architect or Engineer. |
| Garage Slab R309.1 | 9. _____ | The floor area used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids toward the main vehicle entry doorway. Floor drains are not recommended – requires oil separators and sand traps. Asphalt shall not be allowed for carport/garage flooring. |
| Decay and Termite Protection R317 R318 | 10. _____ | Use decay-resistant or treated wood for the following conditions: |
| | a. _____ | Sills unless located a min. of 8" above the ground. |
| | b. _____ | Wood on concrete slabs which are in direct contact with earth and less than 8" from the exposed ground. |
| | c. _____ | Wood joists when closer than 18" or wood girders when closer than 12" to exposed ground. |
| | d. _____ | Beams pocketed in exterior masonry or concrete walls need min 1/2" clearance on top, sides, and ends. |
| Crawl Space R408 | 11a. _____ | Min. 16" x 24" access panel (18"x24" min. if through floor). Must have air-tight seal to living space. |
| | b. _____ | Ventilation: Min.1 sq. foot for every 150 sq. foot under floor area. One vent within 3' of each corner and/or opposite sides to provide cross-ventilation. If vapor barrier is installed, minimum ventilation is reduced to 1/1500. (Min. 2 vents required) |
| | c. _____ | The under floor grade shall be cleaned of all vegetation and organic material. |
| Wood Floor Framing R502.1 | 12. _____ | All load-bearing dimensional lumber for joists, beams and girders including plywood and particleboard shall conform to applicable standards or grading rules and shall be so identified by the grade mark or certificate of inspection issued by an approved agency. The grade mark or certificate shall provide adequate information to determine the "Fb" and "E" values. |
| Anchorage R403.1.6 | 13. _____ | 1/2" diameter anchor bolts shall extend a minimum 7" into concrete & masonry walls and spaced at a maximum of 6' on center and a maximum 12" from plate ends with a minimum of 2 bolts per sill member. (Straps should be installed 4' o.c. max. or per manufacturer's instructions.) |
| Wall Bracing R602.10 | 14. _____ | All exterior walls must be braced to resist lateral loads per the provisions of Section R602.10. See wall bracing handout. |
| Room Size R304 | 15. _____ | Required areas: one habitable room at least 120 sq. ft., and all other habitable rooms at least 70 sq. ft. (Habitable rooms except kitchens shall not be less than 7' in any horizontal dimension.) |
| Ceiling Height R305 | 16. _____ | Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7' measured from the finish floor to the lowest projection from the ceiling. EXCEPTION: Beams, girders, ducts, or other obstructions may not project to within 6 feet 4 inches of the finished floor. EXCEPTION: Not more than 50% of the required floor area of a room or space is permitted to have a sloped ceiling less than 7' in height with no portion of the required floor area less than 5' in height. (Spaces with ceiling heights of 7' min or above are considered habitable). |
| Stairs, Guards, and Railings R311.7 R312 | 17a. _____ | Min. stair width is 3' at all points above handrail and below required headroom height. |
| | b. _____ | Min. headroom is 6'-8" clear at all points. |
| | c. _____ | Min. tread is 10" measured horizontally from the leading edge to leading edge. (Nosing not required if tread is min. 11"). |
| | d. _____ | Max. riser is 7 3/4". Max. riser opening is 4" when more than 30" above floor or walking surface. |
| | e. _____ | The greatest riser height/tread depth variation within any flight of stairs shall not exceed the smallest height/depth by more than 3/8" (Dimensions cannot exceed min./max. of "17c." and "17d." above). Excludes carpeting, rugs, or runners. |
| | f. _____ | All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. |
| | g. _____ | Handrail requirements: |
| | | 1. One side of stairway with four or more risers (right side descending recommended) continuous for full length. |
| | | 2. Graspable per Section R311.7.7.3. |
| | | 3. Between 34" - 38" above nosing. Projecting from wall min. 1.5" to inner edge and max. 4.5" to outer edge. |
| | | 4. Ends shall be returned to wall or shall terminate in newel posts or safety terminals. |
| | h. _____ | Guardrail: Open side(s) of stair shall have a guardrail not less than 34" in height, measured above tread nosing. Balusters/pickets, intermediate rails, and ornamental closures shall be installed so not to allow passage of a sphere 4" or more in diameter on level surfaces, and no more than a 4-3/8" sphere along a run of stairs. |
| | i. _____ | Porches, balconies, decks, adjacent fixed seating, and other raised surfaces located more than 30" above the floor or grade below (measured 36" horizontally from the edge of the open side), shall have guardrails not less than 36" high subdivided per (17h.) above. |

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| Landings R311.3 | 18a. _____ | Every landing shall have a minimum dimension of 36" measured in the direction of travel. The width of each landing shall not be less than the door served. A landing shall be required on each side of an exterior door. The landing at the exterior side shall not be more than 7 3/4" below the top of the threshold. Max. threshold height is 1.5". |
| | b. _____ | There shall be a floor or landing at the top and bottom of each stairway. (Certain exceptions may apply.) |
| Fireplaces and Chimneys Chapter 10 | 19a. _____ | If masonry fireplace opening is less than 6 sq. ft., min. hearth projection is 16" front, 8" each side; if 6 sq. ft. or more, projection minimum is: 20" front, 12" each side. Does not apply to factory-built fireplaces. |
| | b. _____ | Interior chimneys: min. 2" clearance to combustibles; exterior chimneys: min. 1". |
| | c. _____ | Chimneys shall extend at least 3' above the highest point where they pass the roof of a building and at least 2' higher than any portion of building within 10'. |
| | d. _____ | Chimneys shall not support loads other than their own weight unless they are designed and constructed to support the additional load. |
| | e. _____ | Factory-built fireplaces/stoves shall be tested and listed by a nationally recognized laboratory and installed in accordance with listing requirements. Note: In any new construction, a fireplace/stove must be installed prior to final inspection —or— a separate permit with inspections shall be required. |
| Insulation IECC R316.3 | 20. _____ | Provide REScheck calculations for local area or use the following R-values: (see http://www.energycodes.gov/rescheck/ for more info.) |
| | a. _____ | Roof/ceiling assemblies shall have a minimum value of R-38 with baffles as needed. |
| | b. _____ | Exterior walls, including foundation walls shall have a minimum value of R-13 for their full height. |
| | c. _____ | Floors over unheated spaces and stairwells shall have a minimum value of R-19. |
| | d. _____ | Floors over exterior spaces (cantilevered areas) shall fill joists cavity and have a minimum value of R-30. |
| | e. _____ | All exposed insulation materials shall have a flame-spread index not to exceed 25 with accompanying smoke-development factor not to exceed 450. (Use foil-faced or similar when exposed.) |
| | f. _____ | The perimeter of "slab on grade" floors of finished habitable space shall be insulated with a rigid material extending downward from the top of the slab a minimum distance of 24" or downward and beneath the slab for a minimum total distance of 24" having a minimum value of R-10. |
| Exits R310 & R311 R612.2 | 21a. _____ | At least one side-hinged door (usually front) 3' W. x 6'-8" H. min. and max. (32" x 78" clear opening). Max threshold height 1.5" |
| | b. _____ | Min. hall width is 3'. |
| | c. _____ | Every sleeping room shall have: <ol style="list-style-type: none"> 1. An exterior door, or 2. An emergency egress window: <ul style="list-style-type: none"> - Net clear opening of 5.7 sq. ft. (5.0 sq. ft. if a grade floor window) - Min. net clear opening height of 24" - Min. net clear opening width of 20" - Max. sill height of 44" |
| | d. _____ | Min 24" window sill height where exterior sill height is more than 6' above grade or surface below. Windows with stopping devices at 4" max. opening will be allowed ONLY if it complies with ASTM F 2090. |
| | e. _____ | All <u>new</u> basements with ceiling heights of 7' or greater shall have at least one operable emergency escape and rescue window or exterior door. If window wells are required they too must meet egress requirements (3'x3' min. horizontal area). |
| | f. _____ | If an existing basement is being finished without a means of egress to the outside, then the enclosed accessible space under the stair is required to have the walls and ceilings protected with 1/2" gypsum board. |
| | g. _____ | Habitable attics require at least one (1) operable emergency escape and rescue opening. |
| Glazing R308 | 22. _____ | Safety glazing is required in the following areas: all glass doors, side lights, and windows within 24" of a door frame (to height of 60"), areas around showers, tubs, spas/pools, stair landings, railing/guardrails, walking surfaces. Windows with sill height of less than 18" to the floor AND greater than 9 sq. ft. in glazing area will require safety glazing. For further information see Section R308.4, and Glazing Handout. Note: Laminated plastic glazing and safety film do not pass for safety glazing unless further documentation is provided and approved by the local Administrative Authority. |
| Attic Access R807 | 23a. _____ | A readily accessible access opening not less than 22" x 30" with 30" head height clearance shall be provided to any attic area or other location having a clear height of 30" or more. Closets (except walk-in) are not considered readily accessible. |
| | b. _____ | Provide a light in attic within vicinity of access panel. |
| | c. _____ | In all new construction, if air handler units or water heaters are installed, access must be provided by permanent or pull down stairs. |

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| Exterior Covering R703.2 & Table 703.4 Flashing R703.8, & EIFS R703.9 | 24a._____ | The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior finish as required by Section R703.2. (House wrap or similar is required.) |
| | b._____ | Approved corrosion-resistant flashings shall be installed at all of the following locations: Door and window openings, intersection of chimneys, under and at ends of masonry, wood, or metal copings and sills, above all projecting wood trim, intersection of porches, decks, stairs to wood frame construction, wall and roof intersections, and built-in gutters. |
| | c._____ | All Exterior Insulation Finish Systems (EIFS) shall be installed in accordance with the manufacturer's installation instructions, and provide some means to allow trapped moisture to escape. |
| Masonry Veneer Table R703.4 R703.7.4.1 & R703.7.4.2 | 25a._____ | Weather resistant membrane (# 15 felt or equal) required to cover all exposed wood and 6" strips to cover open joints of water repellent sheathing material when a 1" air space is provided. |
| | b._____ | Attach to wood frame w/approved metal ties @ 24" o.c. horizontally and vertically and shall support not more than 2.67 sq. ft. of wall area with a minimum 1" air space to wall sheathing. |
| Light and Ventilation R303 R806.2 | 26a._____ | All habitable rooms shall be provided with a total glazing area of not less than 8% of the floor area of such rooms. One-half of required glazing shall be openable. EXCEPTION: The glazed areas need not be openable where an approved mechanical ventilation system is provided capable of producing .35 air change per hour in that room or a whole house system - and the opening is not required by Section 310 (Exits). (Glazing not required if artificial light is provided.) |
| | b._____ | Bathrooms: 3 sq. ft. glazed, 1/2 openable. EXCEPTION: Not required if artificial light and mechanical ventilation capable of 50 cfm intermittent or 20 cfm continuous. Vent must discharge directly outside of the building envelope. |
| | c._____ | Enclosed attics and roof spaces shall have cross ventilation not less than 1/150 of the area. The ventilation area may be 1/300 provided at least 50% of the area and not more than 80% if equipped with ventilators/ridge vents and the balance with eave or cornice vents. |
| Fixture Clearance R305 & R307.1 R307.2 R702.4.2 | 27a._____ | Each water closet shall have a min. 15" clear each side of center line and 21" to front. |
| | b._____ | Clearance at shower stall is min. 24" in front of opening. |
| | c._____ | Bathrooms shall have a min. ceiling height clearance of 6'8" at the center of front clearance area for fixtures. |
| | d._____ | Min. size for a shower is 30" x 30" interior cross-section. |
| | e._____ | Wall surfaces around showers should be a nonabsorbent surface and shall extend to a height of not less than 6' above the drain. Cement, fiber-cement or glass mat gypsum backers shall be used as backers for all tile in tub and shower areas and wall panels in shower areas. |
| Smoke Alarms R314.3.1 | 28a._____ | Smoke alarms shall be installed in each sleeping room, outside the immediate vicinity of each separate sleeping area, and on each additional story of the dwelling, including basements, cellars, and habitable attics, but not required in crawl spaces, uninhabitable attics, and garages. Smoke alarms shall be interconnected and hard wired with battery back-up. |
| | b._____ | Renovations require compliance with the above. If not readily accessible, hardwiring and interconnection are not required. |
| Carbon Monoxide Detector R315 | 29a._____ | For new/renovation construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages. |
| | b._____ | If there is a fuel-fired appliance within a sleeping space, an additional carbon monoxide detector is required within the space. |
| Sprinklers (County Ordinance) | 30a._____ | Per Frederick County Ordinance all dwelling units are required to be sprinklered. Separate permit required. Contact the Department of Life Safety for additional information at 301-600-3463. |
| | b._____ | For Townhouses and single family homes that have existing sprinkler systems—Every room, except bathrooms less than 55 sq. ft. and small closets, shall have fire sprinkler protection. Sprinklers shall be a minimum of 4 inches off any wall and a maximum of 8 feet off any wall. |
| Garage Separation R302.5 & R302.6 | 31a._____ | Garages shall be completely separated from the dwelling per the following conditions: 1. Attached to dwelling: 1/2" gypsum board on garage side of wall common to dwelling and either: (A) extend up the same wall tight to underside of the roof sheathing—or—(B) up wall to ceiling and extended across the entire ceiling of garage. Doors into dwelling to be solid core wood not less than 1 3/8" thickness, solid or honeycomb core steel door not less than 1 3/8" thickness or 20 minute fire-rated. 2. Under habitable spaces: Ceilings of the garage shall not have less than a single layer 5/8" Type "X" gypsum board. (Door per above) Remaining walls, supporting structure, and boxing around ductwork shall have not less than 1/2" gypsum board. |
| | b._____ | A carport not open on at least two sides will be considered an enclosed garage and shall comply with Items 31.a.(1) or 31.a.(2) above. |
| | 32._____ | Premises identification: Approved numbers or addresses shall be provided for all new buildings in such a position as to be plainly visible and legible from the street or road fronting the property. Minimum 4" characters with contrasting background. Temporary posted address identification shall be installed before any required inspections are scheduled. |
| Site Address (County Ordinance) | | |